



RECOMMENDATIONS FOR INCLUDING RENEWABLES IN A CAP AND TRADE SYSTEM IN CALIFORNIA

The Center for Resource Solutions (CRS), a non-profit organization, convened a Renewable Energy Working Group beginning in 2004 to develop proposals and guidance for the inclusion of renewable energy into greenhouse gas (GHG) cap and trade programs. Several proposals and comments have been submitted to the Regional Greenhouse Gas Initiative (RGGI) underway in states in the Northeastern United States. We greatly appreciate this opportunity to present our thinking to the California Climate Action Team for your consideration. An appendix is attached that explains the rationale behind our recommendations and the importance of maintaining a voluntary renewable energy market when instituting a cap and trade program.

KEY PRINCIPLES

1. Society needs commercially viable, low-cost options for making greenhouse (GHG) emission reductions.
2. Renewable energy generators can be part of the solution and want to participate in emissions trading programs.
3. Inclusion in emissions trading programs will allow renewable energy sellers to "own" the environmental benefit of their clean technologies and the environmental benefit will have value to investors, buyers and other stakeholders.
4. Renewable energy will therefore help society achieve its climate protection goals by expanding the green power market and creating additional emission reductions.
5. Purchasing renewable energy on the voluntary market in order to reduce greenhouse gas emissions is currently very popular among several large organizations, such as Johnson & Johnson, Safeway, Whole Foods Market, HSBC, AMD, Whitewave Foods, Staples, Starbucks, FedEx Kinko's, Nike etc.¹

OPTIONS FOR INCLUDING RENEWABLE ENERGY IN CAP AND TRADE PROGRAMS

Renewable energy facilities, such as wind and solar, have not traditionally been given allowances in the NO_x and SO₂ trading programs. In these programs, regulators have generally only allocated emission allowances on an "input-based" standard (i.e. formula based on the heat content of the fuels burned by power facilities) or "historical emissions" standard (i.e. formulae based on the historical emissions of facilities under the cap). The

¹ For a list of companies purchasing renewable energy see the United States Environmental Protection Agency, Green Power Partnership: http://www.epa.gov/greenpower/partners/gpp_partners.htm





lack of allowances for renewables becomes particularly acute when designing a cap and trade program for GHGs (see appendix). Without allocation, you exclude renewable energy as a strategy for reducing GHG emissions thus limiting your long-term options. The financial benefits associated with allowances can help feed the transformation to a clean energy future by fostering new investments in renewables. From a very preliminary assessment, the following four models could create more favorable outcomes for renewable energy than the models traditionally used. The models presented below represent alternative ways to include renewable energy in cap and trade systems. Since the deliberations at the Climate Action Team's workshops have been fairly general we think it is important that you are equipped with alternative ways of incorporating renewables. The ordering of the alternatives is not meant as a prioritizing. As soon as the Climate Action Team gets closer to recommending one approach the Center for Resource Solutions will be happy to assist you with further specifics on how best to implement the different options.

A. SET-ASIDE PROGRAMS:

If an historical or heat-input model for allowance allocation is used, it can "set-aside" some percentage of the total allowances for certain qualifying technologies. Utilities or qualifying renewable projects may apply for these allowances, which they can thereafter trade in the market, retire etc. In the NO_x and SO₂ programs that have used set-asides, they were limited in number, poorly accessed and poorly utilized.² However, there are a number of design features that are important when considering designing set-asides to benefit renewables that can make them more effective than has been the case in past. Key design parameters of this program include:

Size of the pool: The pool of allowances for renewable energy and energy efficiency should be sufficient (and grow fast enough) to cover all anticipated renewable energy and energy efficiency needs in the region. The Administrator should consider gradually increasing this share of allowances over time as renewables and energy efficiency installations increase.

Eligible allowance recipients: All owners/operators of qualifying renewable power facilities should automatically receive these allowances. Qualifying renewable power facilities are those fueled by eligible renewable resources located in eligible states (see below). Eligible facilities are those that have become operational since January 1, 1997.

² See Wooley, D.R., E.M. Morss, and J.M. Fang, "The Clean Air Act and Renewable Energy: Opportunities, Barriers, and Options", National Renewable Energy Laboratory (2001)





Eligible renewable resources: For the purpose of this program, 'eligible renewable energy resource' means any resource eligible for the California Renewable Portfolio Standard.

Recommended allocation approach: Allowances in the public benefit pool should be allocated to owners/operators of qualifying renewable power facilities on an "output-basis", i.e., lbs of avoided CO₂ per megawatt-hour of renewable power generated. The amount of avoided emissions caused by a particular renewable power facility should be calculated by a pre-determined methodology.

Procedure for receiving allowances: Owners/operators of qualifying renewable power facilities in California would participate in the Western Renewable Energy Generation Information System (WREGIS)³ and receive allowances in relation to the megawatt-hour (MWh) produced over the applicable time period. All eligible renewable energy participating in WREGIS would receive allowances regardless of how they will be used or whether they have received support from a state renewable energy fund.⁴

How public benefit allowances can be used: Once a renewable power generator receives its public benefit allowances, it has a choice to sell them to one of three potential buyers:

- A voluntary buyer who would retire them to support green marketing or emissions reduction claims;
- A utility buyer with an RPS requirement⁵ that would then turn in the renewable energy credit and the allowance to the state for retirement under the RPS program; or
- Sell them to a fossil generator or utility as an additional GHG allowance.

Regardless, once a green marketing, renewable energy program claim, or end use purchase of an allowance is made, the allowance is retired and cannot be resold or reused.

Status of unclaimed public benefit allowances: A state could sell any unclaimed allowances from its public benefit allowance pool. The revenue from these sales could be allocated to the state's public benefits fund for investment in new renewable energy, energy efficiency and low-income energy support projects.

³ WREGIS and other generation tracking systems under development around the country provide reports to their electricity generator account holders and include an accurate summary of the electricity production from the facility during whatever time period is specified. This information has been verified through the traditional 'control area' process or through some other type of independent verification system approved by the system operator. As such, these reports can be relied upon for accurate, up-to-date output data.

⁴ For more details on the interaction of public benefit allowances with Clean Energy Funds, see the Question and Answers section of this document.

⁵ For more details on the interaction of public benefit allowances with RPS Programs, see the Questions and Answers section of this document.





B. RECOMMENDATION IF AN OUTPUT-BASED EMISSIONS ALLOWANCE ALLOCATION APPROACH IS SELECTED BY THE CALIFORNIA CLIMATE ACTION TEAM

If an output-based emissions allowance allocation approach is selected by the California Climate Action Team as its model program, then all renewable generation facilities in the region should be awarded a pro-rata share of the GHG emissions allocations based on their share of electricity output. No other criteria are necessary for renewable power generation in the region. The Public Benefit Allowance Program recommendations (Recommendation A above) would not apply but the Out-of-region Offset Program recommendations (Recommendation D below) could still apply.

C. RECOMMENDATION IF A LOAD-BASED CAP AND TRADE IS SELECTED BY THE CALIFORNIA CLIMATE ACTION TEAM

If a load-based cap and trade is recommended it is imperative that actions are taken to protect the voluntary market for renewable energy. Under a load-based cap and trade each Load Serving Entity (LSE) will be assigned a cap for emissions from the generation resources it uses to supply its demand. If a LSE buys power and the renewable electricity certificates (RECs) from a renewable generator the generation has no associated emissions. However, if a utility is not buying the RECs but only the power from a renewable generator it should be treated as 'system power'. An emissions factor should be assigned to these purchases and other system power, such as spot market purchases. This way the purchaser of the RECs effectively reduces the greenhouse cap and contributes to reduce GHG emissions in California.

D. OUT-OF-REGION OFFSET PROGRAM FOR RENEWABLES LOCATED OUTSIDE OF CALIFORNIA

We recommend that the California Climate Action Team put in place an out-of-region offsets program in which renewable energy projects are eligible for offset credits. This recommendation assumes that renewable energy projects located in California earn allowances through the public benefit allowance pool (Recommendation A above).⁶ It could also apply to recommendations B and C.

Renewable energy is a desirable candidate for inclusion in an offset program. As a valuable commodity that is metered for sales purposes, quantification of the volume of renewable electricity is relatively straightforward. There are methodologies for converting the volume of renewable electricity into tons of mitigated CO₂ (see

⁶ We recognize that there may be a desire to cap or limit the degree to which out-of-region offsets can be used to meet GHG requirements in California. We have left that to you to determine.





recommendation below). In addition, a well-developed system of tracking the renewable kilowatt-hours is in place, both through national programs such as the Green-e program and through the NEPOOL/GIS, PJM-GATS and ERCOT power tracking system and other similar systems.

Eligible renewable resources: The same renewable resources that are eligible for public benefits allowances (see above) would be eligible for offsets.

Geographic Eligibility: Renewable energy offsets should be allowed from renewable projects located anywhere within North America⁷, but outside the California. Should another region establish a greenhouse (GHG) cap-and-trade regime or some other mechanism for issuing carbon allowances, the Administrator would not continue to issue allowances to projects from that region. However, renewable generation that has verified GHG allocations issued to it by another program (that meets California's standards) would still be acceptable for offset purposes as long as GHG benefits have not been counted toward any other environmental or renewable energy target.

Additionality: For offsets, the determination of additionality is essential to exclude carbon reductions from projects that probably would have occurred anyway. Following the World Resource Institute's *The Greenhouse Gas Protocol: Project Quantification Standard*,⁸ offset projects are not additional if they are being undertaken to come into compliance with regulations, or as a result of "voluntary agreements" between business and government in lieu of regulations. Thus, at a minimum, the following are not eligible as offset projects. Projects:

- 1) For which the renewable energy (or energy certificates) have been used to meet an RPS requirement in another state, or
- 2) That have been awarded credit for GHG emissions reductions that have been applied to meet a state regulatory or GHG requirement [e.g., the Oregon and Washington carbon dioxide standards for new power plants], or
- 3) That have been developed as part of a broader settlement (e.g. Minnesota wind projects developed to compensate in part for extending on-site storage of nuclear waste), or
- 4) That have been developed as part of an enforcement action, or
- 5) That are being paid for in a regulated utility's rates, or

⁷ As long as the data come from a state authorized independently verified source like a tracking system.

⁸ http://www.ghgprotocol.org/DocRoot/QvXq1naQ8UDQ1WrC1dOn/GHGProtocol_ProjectRTDraft_lineumbers_Sent_2003.pdf





- 6) For which the renewable energy certificates⁹ have been sold into some other renewable energy market.

Timing: Renewable energy projects that become operational after the date that the California program becomes operational should be eligible as offsets.

Measurement and administration of the Offsets Program:

Measurement and conversion of the generation into carbon offsets can be accomplished by (1) The verification of electricity generation through a generation tracking system or similar independently verified data source; and (2) the conversion of this generation information into tons of avoided CO₂ through a widely accepted emissions calculation methodology (GHG Protocol).¹⁰ The amount of avoided emissions caused by a particular renewable power facility should be calculated by applying the same pre-determined methodology that is used to calculate renewable energy allowances for in-region offsets.

The program Administrator will need to establish a process for reviewing and approving offset projects. It is important that projects are treated consistently, and that input from a broad spectrum of stakeholders is considered when developing the approval criteria. In order to ensure consistent treatment, one set of offset approval criteria based upon stakeholder input should be developed and it could be administered by the California Climate Action Registry.

We appreciate the opportunity to provide you with comments and we look forward to our continued participation in the upcoming meetings of the Climate Action Team. If you have any further questions, please feel free to contact us.

Sincerely,

Jan Hamrin
President
Center for Resource Solutions

⁹ Renewable energy certificates are also referred to as RECs, TRCs, TRECS, Green Tags, Green Tickets, and Renewable Energy Credits. These terms are essentially the same and represent the social and environmental benefits associated with the generation of one MWh of renewable power.

¹⁰ The Climate Action Team could adopt a common "avoided emissions" calculation methodology that the World Resources Institute (WRI), and WBCSD Greenhouse Gas Protocol Initiative, working with a number of national and international stakeholders, is in the process of developing and is expected to have completed by mid-2005.





Appendix: RATIONALE FOR RECOMMENDATIONS

1. Public Benefit Allowance Program

Q: We expect that a carbon cap and trade program will raise the cost of fossil-fuel based electricity in the region and that will directly benefit renewables. Isn't that enough without also giving renewables allowances?

A: Current SO₂ and NO_x emissions trading programs have not helped bring new renewables to market. Renewable energy is part of the long-term strategy for reducing man-made greenhouse gas emissions. GHG emissions markets being designed today need to recognize this contribution and send a market signal up-front to significantly increase the scale of renewable power generation. In addition, coal and other fossil fuel based generators, if grandfathered, will receive windfall profits because they will be permitted to emit CO₂ AND receive valuable allowances. These windfall profits will negate any electricity price benefits renewable power will receive. This will economically disadvantage renewables unless they receive allowances. Finally, policymakers should be creating synergies between existing and new policies to ensure that these programs are economically efficient and environmentally effective. In addition, those programs were developed before renewables were viewed as an important growth area in the energy industry and the economy.

Q: What is the rationale for a Public Benefit Allocation for renewable energy and energy efficiency?

A: We are calling this a public benefit allocation to indicate pro-active distribution and not to invoke the idea of the set asides included in the NO_x budgets, which were small (below 5%) and had high transaction costs which discouraged energy efficiency and renewable energy developers from going after them.

The rationale for a Public Benefit Allocation is threefold:

1. There is societal value to promote renewable energy technologies which are just coming to scale, and government policy is a critical component to help build a robust marketplace.
2. A public benefits allowance program allows states and the region to create regional solutions over time – the simplicity of this approach provides flexibility and allows different technologies and programs to emerge as appropriate given the region's needs.
3. The public benefits allocation process for renewable energy on an output basis is designed to overcome the high transaction and administrative costs associated with the SO₂ and NO_x emissions trading set aside programs.





We have therefore endeavored to design a public benefit allocation that can be used for both renewable energy and energy efficiency that will recognize the short-term GHG benefits from these technologies, as well as support for the long-term transformation of the electricity sector into one that features more efficient use of electricity and the creation of a cleaner generation system. Renewable energy and energy efficiency are environmentally and economically beneficial for the region and key to this transition thus deserving of support. Activities that create severe or highly uncertain environmental impacts or risks should not be included in a Public Benefit Allocation pool or for out-of-region offsets.

Q: We want to have this program as easy to administer as possible. Doesn't your Public Benefit Allocation make administration complicated?

A: No, we believe that with the development of the WREGIS the issuing of allowances to renewable generation facilities can be very fast, efficient and accurate with low transaction costs for both the program administrator and the renewable generator.

2. Out-of-Region Offset Program

Q: Why did you include an out-of-region offset program as well as an in-region public benefit allowance pool?

A: An offset program offers flexibility and may be a less costly alternative for compliance. Including renewables in the offset program will encourage investment in non-emitting generation in neighboring regions thus helping to reduce absolute emissions of GHG, and other air pollutants that would contribute to air pollution within the regional air-shed.

Q: Doesn't this effectively raise the GHG cap in the region?

A: The overall cap stays the same regardless of the availability of offsets; offsets just provide a flexibility mechanism for complying with the cap. GHG levels will be reduced in other areas – and the region can still meet its' goals (as a global pollutant, the location of the GHG emissions reduction is not a critical issue). Offsets will reduce the price pressure on in-region allowances and lower the cost of compliance.

Q: What are the eligibility requirements for renewables under the offset compared to the public benefit allowance pool?





A: The primary difference is that for allowance eligibility, the required date after which the renewable energy facility must have become operational is January 1997- for offsets, the required date is after the point at which the California cap and trade program goes into effect.

3. The Integration of the California Cap and Trade with the Renewable Portfolio Standard (RPS) and Clean Energy Funds (CEF)

Q: Regarding the interaction of the Cap and Trade with the Renewable Portfolio Standard, should renewable that are used for RPS compliance in California receive GHG allowances?

A: We recommend that RGGI issue allowances to all eligible renewable energy production in the region; but that for any renewable energy used to comply with a state RPS program, the GHG allowances be required to accompany the renewables and be retired on behalf of the ratepayers of that state (unless the RPS administrator determines otherwise). This provides an explicit way to track the impact of the RPS program on GHG reduction targets (that can also be included in periodic cap reduction calculations) while at the same time simplifying administration for both programs. Under this approach, potential RPS program impacts would not be included in the initial baseline calculations while actual GHG certificate retirements would be included in cap updates.

If the RPS administrator decides not to require that carbon allowances accompany the renewables being used for RPS compliance, then that state's RPS program should not be included in the calculation of the GHG baseline for that state. Nor should it be included in any periodic cap reduction calculations since that RPS program will not affect GHG reductions.

Q: Should projects that receive incentives from state Clean Energy Funds be able to receive GHG allowances?

A: We recommend that all eligible renewable generators be eligible for GHG allowances regardless of whether they receive an incentive payment from a Clean Energy Fund. It is very difficult to decide where to draw a line about 'incentives'. Clean Energy Funds were created for a variety of reasons and yield many other benefits than carbon reduction. There are also a number of other incentive programs for different types of technologies and fuels. Would fossil plants that receive various tax, depletion allowances, and other government incentives be ineligible for allowances? Unless you are going to apply such a rule to all types of generation and all incentive programs, there is no justification for applying it only to renewables that receive support through a Clean Energy Fund.





Finally, if the fund, as quid pro quo for the incentive payment, requires a pro-rata share of renewable certificates from the project be returned to the fund, then the fund administrator should also determine if the associated GHG allowances would come back to the fund as well.

